

CLAIMS

What is claimed is:

- 5 1. An organic electronic device, comprising:
 a deposition surface;
 a photo-resist layer, said photo-resist layer fabricated
 upon said deposition surface, said photo-resist layer patterned
 into a plurality of banks to define pockets upon said deposition
10 surface; and
 an organic layer, said organic layer composed of a dried
 film resulting from drying a reformulated organic solution upon
 said deposition surface and within said pockets, said
 reformulated organic solution comprised of a mixture of base
15 organic solution and humectants, further wherein the surface
 energy of said deposition surface is much lower than the surface
 energy of said photo-resist layer banks, said dried film having
 a substantially flat and uniform profile.
- 20 2. A device according to claim 1 wherein said organic
 layer is a conducting polymer layer.

3. A device according to claim 2 wherein said reformulated organic solution includes a base conducting polymer solution, humectants and water.

5 4. A device according to claim 1 wherein said device is treated with a plasma process to selectively cause said deposition surface to be more hydrophilic and said photo-resist banks to be more hydrophobic.

10 5. A device according to claim 2 wherein said organic electronic device is a OLED device.

6. A device according to claim 5 wherein said deposition surface is the lower electrode layer.

15 7. A device according to claim 6 further comprising an emissive layer, said emissive layer fabricated over said conducting polymer layer, said emissive layer emitting light upon charge recombination.

20 8. A device according to claim 7 further comprising a cathode layer disposed over said emissive layer.

9. A device according to claim 3 wherein said base conducting polymer solution is a PEDOT:PSS solution.

10. A device according to claim 9 wherein the ratio of PEDOT to PSS is one part to six parts, respectively.

11. A device according to claim 10 wherein the ratio of base conducting polymer solution to humectants to water is thirty parts to forty parts to thirty parts, respectively.

12. A device according to claim 1 wherein said device is an organic transistor.

13. A device according to claim 1 wherein said device is an organic solar cell.

14. A method of fabricating an organic electronic device, said method comprising:

patterning a lower electrode layer upon a substrate, said lower electrode layer having a top exposed deposition surface;

fabricating a photo-resist layer upon said lower electrode layer, said photo-resist layer patterned to define pockets on said deposition surface;

treating said device to raise the surface energy of said deposition surface and lower the surface energy of said photo-resist layer;

reformulating an organic solution by mixing a base organic
5 solution with humectants; and

depositing drops of said reformulated solution into each said pocket, said drops allowed to dry into an organic layer, said organic layer having a substantially flat and uniform profile.

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15. A method according to claim 14 wherein said treating includes applying a fluorinating plasma process.

16. A method according to claim 14 wherein said organic
15 electronic device is an organic light emitting diode (OLED) display.

17. A method according to claim 16 wherein said lower electrode layer functions as an anode.

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18. A method according to claim 17 wherein said organic layer is a conducting polymer layer.

19. A method according to claim 18 further comprising:

fabricating an emissive layer above said conducting polymer layer, said emissive layer emitting light upon charge recombination.

5 20. A method according to claim 18 wherein said base organic solution is a PEDOT:PSS solution.

21. A method according to claim 20 wherein the ratio of PEDOT to PSS is one part to six parts, respectively.

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22. A method according to claim 21 wherein the ratio of base organic solution to humectants to water is thirty parts to forty parts to thirty parts, respectively.

15 23. A method according to claim 14 wherein said device is an organic transistor.

24. A method according to claim 14 wherein said device is an organic solar cell.

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25. A method according to claim 15 wherein said fluorinating plasmas process uses sulfur hexafluoride.

26. A method according to claim 14 wherein said humectants are at least one of glycols and glycol derivatives.